



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/772,066	02/04/2004	Rainer Gluck	022230-9026-00	4530
23409	7590	11/13/2007	EXAMINER	
MICHAEL BEST & FRIEDRICH LLP			LEO, LEONARD R	
100 E WISCONSIN AVENUE			ART UNIT	PAPER NUMBER
Suite 3300			3744	
MILWAUKEE, WI 53202			MAIL DATE	DELIVERY MODE
			11/13/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/772,066	GLUCK, RAINER
	Examiner	Art Unit
	Leonard R. Leo	3744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 16 August 2007.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-15 and 17-42 is/are pending in the application.

4a) Of the above claim(s) 5,7,10,14,19,21,24,28,33,35,38 and 42 is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-4,6,8,9,11-13,15,17,18,20,22,23,25-27,29-32,34,36,37 and 39-41 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some \* c) None of:

- Certified copies of the priority documents have been received.
- Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
- Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 9/26.

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.

5) Notice of Informal Patent Application

6) Other: \_\_\_\_\_.

## DETAILED ACTION

The amendment filed on August 16, 2006 has been entered. Claims 1-15 and 17-42 are pending, and claims 5, 7, 10, 14, 19, 21, 24, 28, 33, 35, 38 and 42 remain withdrawn from further consideration.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 8-9, 12, 29, 36-37, 40 and are rejected under 35 U.S.C. 102(b) as being anticipated by Tajima et al. Tajima et al discloses first end plate 111 having a fluid connector with a first plane (i.e. parallel to upper plate 103) and a second plane (i.e. coinciding with hole 111B) forming an acute angle, a second end plate 101, intermediate plates 3, 5, and fluid line 131, 133. Furthermore, the recitation of “drawn” is considered to be a method limitation in an apparatus claim, which bears no patentable weight in this instance. See MPEP 2113.

Regarding claims 8 and 36, as perceptibly gleaned from the drawings, the acute angle is about 65 degrees.

Regarding claims 9 and 37, the recitation of “soldered” is considered to be a method limitation in an apparatus claim, which bears no patentable weight in this instance. See MPEP 2113.

Regarding claims 12 and 40, Tajima et al discloses manifold 67 in the plates 3, 5.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim s 1-4, 6, 8-9, 12, 15-18, 20, 23, 29-32, 34, 36-37 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Armes in view of Ostbo.

Armes discloses a plate heat exchanger comprising a first end plate 16 having a connector 12 with hole 46, a second end plate 18, intermediate plates 20, and fluid line 46'; but does not disclose an acute angle formed between two cross-sectional planes of the connector.

Ostbo discloses a plate heat exchanger comprising a first end plate 4 having a fluid connector with a first plane and a second plane forming an acute angle, a second end plate 5, intermediate plates 8, and fluid line 7 having an acute angle formed between two cross-sectional planes of the connector for the purpose of minimizing pressure drop of the outlet fluid.

Since Armes and Ostbo are both from the same field of endeavor and/or analogous art, the purpose disclosed by Ostbo would have been recognized in the pertinent art of Armes.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Armes an acute angle formed between two cross-sectional planes of the connector for the purpose of minimizing pressure drop of the outlet fluid as recognized by Ostbo. Furthermore, the recitation of "drawn" is considered to be a method limitation in an apparatus claim, which bears no patentable weight in this instance. See MPEP 2113.

Regarding claims 2-3, 17 and 31, the fluid line 46' of Armes extends over and is roughly parallel to the first end plate 16.

Regarding claims 4, 6, 18, 20, 32 and 34, Armes discloses auxiliary support 14 with an upstanding flange soldered to the first end plate 16 to support the fluid line 46'. Furthermore, the recitation of "soldered" is considered to be a method limitation in an apparatus claim, which bears no patentable weight in this instance. See MPEP 2113.

Regarding claims 8 and 36, as permissibly gleaned from the drawings, Ostbo discloses the acute angle is about 70 degrees.

Regarding claims 9, 23 and 37, Armes discloses fluid line 46' is soldered to the connector 14. Again, the recitation of "soldered" is considered to be a method limitation in an apparatus claim, which bears no patentable weight in this instance. See MPEP 2113.

Regarding claims 12 and 40, Armes discloses manifold formed by aligned openings 24, 26, 28, 30 in the plates 20.

Claims 11, 13, 25, 27, 39 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Armes in view of Ostbo as applied to claims 1-4, 6, 8-9, 12, 15-18, 20, 23, 29-32, 34, 36-37 and 40 above, and further in view of Wright.

The device of the combined teachings of Armes and Ostbo lacks a vent.

Wright discloses a plate heat exchanger comprising a first and second end plates 9 having a connectors, intermediate plates 8, fluid line 10, and vent 11 for the purpose of ease of maintenance.

Since Armes and Wright are both from the same field of endeavor and/or analogous art, the purpose disclosed by Wright would have been recognized in the pertinent art of Armes.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Armes a vent for the purpose of ease of maintenance as recognized by Wright.

Regarding claims 13, 27 and 41, Wright discloses the connector is concentric with the manifolds defined by holes 2-5.

***Response to Arguments***

The objection to claim 16 under 37 CFR 1.75(c), is withdrawn in view of the claim cancellation.

The rejection of claims 8 and 36 under 35 U.S.C. 112, second paragraph, is withdrawn in view of the claim amendments.

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Regarding applicant's remarks with respect to Tajima et al, the end plates 101, 111 are "substantially" the same shape (i.e. circular) as the intermediate plates 3, 5, as disclosed in Figures 5 and 20 (column 10, lines 32-45).

In the combination of Armes and Ostbo, the primary reference of Armes discloses the plates have substantially the same shape, wherein the secondary reference of Ostbo teaches one of ordinary skill in the art to employ an acute angle formed between two cross-sectional planes of the connector for the purpose of minimizing pressure drop of the outlet fluid.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard R. Leo whose telephone number is (571) 272-4916. The examiner can normally be reached on Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on (571) 272-4834834. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/LEONARD R. LEO /  
PRIMARY EXAMINER  
ART UNIT 3744

November 6, 2007